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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/378,596	08/20/1999	SHAIL ADITYA GUPTA	HP10981866-1	9330

			EXAMINER
22879	7590	04/13/2004	BRODA, SAMUEL

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ART UNIT	PAPER NUMBER
2123	

DATE MAILED: 04/13/2004

18

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/378,596	GUPTA ET AL.
	Examiner	Art Unit	
	Samuel Broda	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _29 January 2004_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-20_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) _16-20_ is/are allowed.

6)☒ Claim(s) _1-15_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _20 August 1999_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   This communication is in response to Applicants' <u>Amendment and Response to Office</u>

<u>Action</u> mailed on 29 January 2004. Claims 9, 15, and 18 were amended; claims 1-20 are

pending.

Claim Rejections - 35 U.S.C. § 112, First Paragraph

2.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of
> making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it
> pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode
> contemplated by the inventor of carrying out his invention.

2.1   Claims 1-15 are rejected under 35 U.S.C. 112, first paragraph, as containing

subject matter which was not described in the specification in such a way as to enable one skilled

in the art to which it pertains, or with which it is most nearly connected, to make and/or use the

invention.

2.2   Regarding independent claims 1 and 10, claim 1 includes the limitation

"determining sets of mutually exclusive operations from the specified processor operations based

on the desired instruction level parallelism" and claim 10 includes the limitation "from an input

specification defining a set of specified processor operations and instruction level parallelism

among the specified operations, determining sets of mutually exclusive operations."

The Specification does not appear to teach how one reasonably skilled in the art would

determine the sets of mutually exclusive operations; the Specification instead appears to describe

an "input specification 34" in which the sets of mutually exclusive operations have already been

determined.

According to the Specification at page 17 lines 23-30 (in-part):

> . . . The datapath synthesizer 20 (Fig.1) processes an input specification
> like the one graphically depicted in Fig. 2 (e.g., Item 34) to create a physical
> datapath representation 38 . . . As shown in this example, **the input specification**
> **34 provides the desired operation groups 35, and specifies the instruction**
> **level parallelism among these groups as "exclusion groups"** . . .
> [Emphasis added.]

As shown in Fig. 2, the operation groups 35 and exclusion group 36 are encapsulated within

input specification 34.

Although pages 13-17 of the Specification may describe how input specification 34 is

generated, the Specification does not appear to contain how the exclusion groups are generated

as part of the generation of input specification 34.

Taken as a whole, only with undue experimentation could one reasonably skilled in the

art make and/or use the invention, because of the omissions in the subject matter described in the

Specification.

2.3   Claims 2-9 and 11-15 are each dependent on one of independent claims 1 and 8

and are rejected using the same analysis.

Allowable Subject Matter

3.   Claims 16-20 are allowed.

Applicants' Arguments

4.   Regarding the prior rejection under Section 112, first paragraph, Applicants argue the

following at page 21 paragraph 1 of the Amendment:

> . . . At page 17, lines 25-30 of the specification, the Applicants disclose that input
>
> specifications identify groups of operations and the instruction level parallelism
>
> that exist between them. The groups of operations are termed "exclusion groups".
>
> In other words, mutually exclusive operations are determined from an
>
> identification of the instruction level parallelism that exists between the groups of
>
> operations. The Applicants respectfully submit that the above referenced
>
> discussion clearly describes how sets of mutually exclusive operations are
>
> determined.

Examiner's Reply

5.   In response to Applicants' argument, the Examiner respectfully disagrees for the

following reasons:

Applicants' argument quoted above does not appear to indicate <u>how</u> the claimed

invention <u>automatically</u> performs the claim limitation of "determining sets of mutually exclusive

operations from the specified processor operations based on the desired instruction level

parallelism." The automation of this step is implied by the preambles of independent claims 1
and 10; claim 1 states "A method for automatic design of a processor datapath . . ." and claim 10
states "A method for automatic synthesis of functional units in a programmable processor
datapath . . ."

As understood by the Examiner, the "abstract ISA specification" described at page 17 of
the Specification corresponds to "input specification 34" identified at page 17 line 23.
According to Applicants' argument above, the input specification contains the "exclusion group"
information. However, this argument does not appear to indicate how this information is
generated. According to the Specification at page 17 lines 1-5, the input specification is
generated from the "ArchSpec 10" abstract textual description.

The Specification at pages 13-17 describes how the ArchSpec 10 description is
manipulated to form "Exclusion Group[s]" but does not disclose an algorithm describing the
formation of these groups, in order to demonstrate the <u>automation</u> of forming an input
specification containing "sets of mutually exclusive operations" as required in claims 1 and 10.

For these reasons, Applicants' argument is not sufficient to remove the rejection under
Section 112, first paragraph. Applicants may be able to traverse this rejection by indicating
where the algorithm for the automatic generation of exclusion groups (corresponding to
"mutually exclusive operations" in claims 1 and 10) is contained in one of the applications
incorporated by reference. See MPEP § 608.01(p).

Conclusion

6.   The prior art made of record and not relied upon is considered pertinent to Applicants'

disclosure.

7.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 C.F.R. 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION
IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE
EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE
OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL
AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN
THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE
ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R.
1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY
ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE
LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

9.   Any inquiry concerning this communication or earlier communications from the

Examiner should be directed to Samuel Broda, whose telephone number is (703) 305-1026. The

Examiner can normally be reached on Mondays through Fridays from 8:00 AM – 4:30 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's

supervisor, Kevin Teska, can be reached at (703) 305-9704. The fax phone number for the

organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the group receptionist, whose telephone number is (703) 305-3900.

SAMUEL BRODA, ESQ.
PRIMARY EXAMINER